The role of rehabilitation of buildings in the urban integration, social cohesion and environmental responsibility.

Abstract: *In the framework ofthe National Research Plan2008-2011, our research poses estrategy for the design and evaluation of plans and programmes of urban integrated regeneration. The objective is to develop a study on the role of rehabilitation of buildings in concepts like urban integration, social cohesion and environmental responsibility.*

The research proposes a methodological tool for evaluating urban regeneration processes from a holistic perspective that can serve as a guide for governments and technical teams to address intervention in consolidated urban areas with physical and socio-economic problems.

The development of the tool has inevitably led to delve into different areas where you can intervene but has not lost sight of the complex interplay of factors involved in the process.It is an open source tool to visualize Urban Integrated Rehabilitation processes.

Urban Integrated Regeneration, Urban Sustainability, Social Cohesion, Deprived neighbourhoods.

Urban Integrated Regeneration at European and Spanish framework

The main objective of this paper is to introduce the methodology for integrated urban intervention in neighborhoods developed by GIAU +S (Grupo de Investigación en Arquitectura, Urbanismo y Sostenibilidad de la Universidad Politécnica de Madrid). The role of cities in employment growth in Europe is well recognized; however, many urban areas have high rates of poverty, unemployment and social exclusion and poor quality housing, energy- inefficiency, and environmental degradation**.**

Our interest is to highlight the role of Integrated Urban Regenerationas a fundamental instrument of intervention in the consolidated city in order to achieve the goals on integrated urban development which have been raised by the European Union in the framework of Cohesion policy for the coming years. Integrated Urban Regeneration seeks to articulate the different areas of the city promoting quality of life, retrieving the “right to the city”of the most deprived areas, and encouraging process of social and economic inclusion.

Therefore, at European level, the Commission proposes specific investment priorities for urban areas, which concentrate funding for cities in a number of key strategic priorities, but always from an integrated approach. One of these strategic priorities is the economic and physical regeneration of deprived urban areas.

In the Spanish context, distribution of legislative competences and management among the three levels of government (central state, autonomous regions and municipalities) is reflected in the way in which EU policies are implemented. At the central level, urban development - traditionally linked to Housing policies-depends right now on the Ministry of Public Works (Ministerio de Fomento), which sets thereferencelines for urban development policy. It also

represents the National Focal Point of the EUKN Network in Spain. On the other hand, the Ministry of Environment (Ministerio de Agricultura, Alimentación y Medio Ambiente) promotes sustainability, amongothers, at the urban level. Thirdly, the Ministry of Finance (Ministerio de Hacienda y AdministracionesPúblicas) assumes the role of facilitator between the different administrative levels in Spain, it also channels EU funds, especially the ERDF dedicated to integrated urban development initiaties (URBAN and Iniciativa URBANA).

According to the Spanish Constitution, the Autonomous Community is the administrative level with competences for framing and managing territorial development policies in its territories. However, very few regions have developed tools or specific legislative frameworks to promote urban revitalization from an integrated perspective.The “Leyde Barrios” in Catalonia (2004) and Balearic Islands (2009) have been one notable exception at the regional level, introducing new management tools and funding and integrated vision for urban development. Similarly, IZARTU program promoted by the Basque Government is aterritorial cohesion regional initiative, which has supported since 2001 urban projects and integrated local development in a similaraproach in the line of URBAN projects.

At state administrative level, urban regeneration and sustainable urban development in Spain is currently framed in a series of laws and national plansas: Spanish Strategy for Climate and Clean Energy 2007-2012-2020 Strategy; Law8/2013 of 26 June, rehabilitation, regeneration and urban renewal; State Plan 2013-2016 to promote rental housing, rehabilitation, regeneration and urban renewal; National Action Planfor Energy Efficiency 2014-2020.

However, so far, the actions have focused on improving neighborhoods from a sectorial perspective, primarily for the maintenance and preservation of housing. In order to address the problems at the scale of the neighborhood, new financial aid has been regulated specifically targeting these areas through the so-called "Integrated Rehabilitation Areas” (ARI) and "Urban Renewal Areas” (ARU) instruments. Although these proposals, focusing primarily on deprived neighborhoods, intend to take account of social, economic and environmental problems of neighborhoods, actions will mainly focus on the refurbishment of buildings, infrastructure works or physical accessibility improvements and new housing within the area. In this sense, these actions don´t really represent integrated urban development in the line of URBAN projects or European priorities.

The need for new tools for a comprehensive approach.

From this perspective, it seems necessary to discuss on the need for tools that allow us to visualize the degree of comprehensiveness of the proposals of intervention at neighborhood scale. In this line, our research group (GIAU+S /UPM) is currently working in a project called:“A strategy for designing and assessing plans and programs of Integrated Urban Regeneration Intervention in Spanish peripheral urban areas through Integrated Rehabilitation Areas and URBAN program.”

Intervention in the consolidated city is an instrument in process of revision which requires the implementation of rehabilitation plans and programs that cope with the complexity of urban problems and the diversity of stakeholders. This method of viewing the comprehesiveness of the Integrated Urban Regeneration project is introduced as a response to this challenge.

In order to make this easier, this project aims to define a strategy, in the form of a guiding tool, that facilitates the design and assessment of plans and programs of Integrated Urban Regeneration, taking into account the needs and priority of any intervention in all their aspects (urban environment, urban planning, housing and socio-economics), and all the involved stakeholders.

This methodology is an open source tool that aims to facilitate decision making to visualize relationships between the different fields of action and show the priorities of the proposal. Therefore, it can serve as a basic tool for citizen participation in the processes of Urban Integrated Rehabilitation.

This strategy, established from an urban planning point of view, is based on a legal analysis, considering all the related literature, the opinion of an Expert Panel and the study of existing experiences categorized in a Matrix in which all the items to be addressed by rehabilitation programs are arranged hierarchically.

The guiding tool: an open source matrix.

The proposed method avoids the models that seek to determine the valuation of the results through the allocation values to the different solutions and classify them according to them. Instead, complete visualization of the designed processes ensures that the agents involved in the process (political leaders, technicians and citizens) have to determine what actions are developed and which is relevant to delay or defer time based on priorities and available resources. Thus, the limitations and shortcomings of the proposal are not hidden but are displayed in order to assess the extent of the initial objectives. These objectives should seek better urban quality.

The guide tool comprises a matrix of items grouped in categories which in turn are clustered in four different areas. One of the additional objectives of this work is to analyze the relationships between the areas, categories and items.

The matrix is organized around the four major areas of intervention that all comprehensive approach must include: Regional and Urban Planning, Urban design and local environment, Building and Socioeconomic area.

[OUT]_Regional and Urban Planning Area:

Since, according to the reference document of the Charter of Toledo, Integrated Urban Regeneration is a planned process to be addressed by the city as a whole and its parts function as components of the urban organism. Measures of social and economic intervention or measures physical- environmental intervention located in the neighbourhoodare not enough by themselves in isolation but must be linked into overall planning. In this perspective, the localized urban regeneration initiatives should be managed on a global planning framework guided by the basic criteria of the Urban Integrated Regeneration.That is, the planning should be directed to the discrete and comprehensive rehabilitation of the city, with special emphasis on the most deprived areas and the double dimension of planning processes: “political regeneration” (citizen participation in the decision-making) and “physical regeneration”. However, because of the overall design of the research project, this area refers only to the determination of spatial planning of urban or regional planning.

[DMA]_Urban design and local environment Area:

This area includes all aspects related to the physical environment and affecting the neighbourhood for intervention. It considers both the built environment and the natural environment. It also considers the relationship of neighbourhood with those aspects of the immediate environment they can influence the comfort and welfare of all stakeholders (residents, visitors, businesses, etc.).

The main objective is to improve the quality of life and comfort of citizens through regeneration of outer space, both the immediate environment to housing as the rest of the public open space in the neighborhood or area of intervention.

[ED]_Building Area:

The building area is concerned with the analysis, diagnosis and proposals for action aimed at the qualification of living space built. The built environment includes, for all uses present in the area, both proprietary and collective spaces within the building, as the clearances legally bound to it. The intervention will focus on the built support, understood as the collective part of the building managed by (private or public) owners’communities and intended to be permanent. In proprietary spaces, the intervention could only be produced in cases of severe unsanitary conditions, uninhabitability and accessibility deficiencies.

The objective is to determine the actions required to achieve at least the same benefits as the equivalent reference building. New building construction that is homologous to rehabilitate is considered equivalent reference building. For residential use, and in the absence of specific regulations for rehabilitation, the landmark building is the new construction of subsidized housing (VPO).

[SE]_ Socioeconomic Area:

Socioeconomic area deals with the necessary steps towards the achievement of social and economic model that seeks fairness and equal opportunity, including projects for local economic development, social inclusion and associative network support to enable their participation in decision-making.

It aims to explain a proposal for socioeconomic development in the area of action, based on the strengths and opportunities offered by both the physical environment and the social and economic fabric.I t seeks to improve the integration of the area of action within the economic dynamics of the city or metropolitan area. The objective is to ensure convergence key indicators on vulnerability and social exclusion (unemployment, income, school failure, delinquency) with the mean values of the city or metropolitan area. All categories must attend to gender and age, which thus becomes a fundamental aspect that is incorporated transversely in different items.

While it is an open source methodology, areas intended to be fixed while the category and all items are contextual and may be modified within the process of participation and discussion of proposals. Possible development of the matrix *[image 1]* on the next page is included.

The second step of the disaggregation categories are related to those major themes that define each of the four areas. The more disaggregated level corresponds to the item where specific aspects are collected to evaluatethe intervention.

A visualization tool of the proposals, an instrument for participation

The matrix becomes a tool for discussion and participation of agents where priorities are displayed, on which aspects are involved and which are not. As such visualization tool should find a clear graphic image.

The matrix becomes a tool for discussion and participation of agents where you can prioritize and decide on concrete interventions. The tool allows you to display those aspects that are included in the proposal and those who are outside. As such visualization tool should find a clear graphical representation. For this reason, the matrix will be shown in a diagram ("Daisies") which is represented by a simple color code the qualitative assessment of the quality of each items, category or areas in the neighborhood. So the red color represents an unfavorable level; yellow an improved level; and blue, the acceptable level.

This may be applied at different stages of urban intervention: diagnosis, proposed and final evaluation of the results.

Image. 1

In 2011, the research group to which we belong (GIAU+S, UPM) with the group Tecnalia and caviar at the University of the Basque Country (UPV) in the “Diagnosis about intervention needs in the renovation of the building stock in the Basque Autonomous Community (BAC)” tendered by the Basque Goverment.The purpose of this project is to obtain an Inventory and Diagnosis of residential buildings, which were built before 1980 at the BAC, and its urban environment.The giau+s in this project developed an innovative methodology antecedent of the current for the development of comprehensive policies aimed at the rehabilitation and renovation of degraded urban areas. This methodology has been implemented in a pilot case, Zaramaga, a neighborhood of the city of Vitoria-Gasteiz, for which we have developed a specific intervention project. This proposal displaya similar systemwas used by the diagrams

(calleddaisies) for the diagnosis of the neighborhood and evaluate the impact of the Urban Integrated Regeneration proposal. *[image 2]*

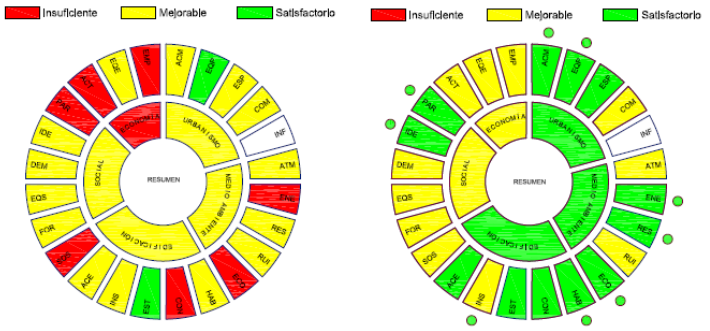

Image.2: Daisis diagram. Zaramaga projec, diagnosis and proposals.

Following a series of works developed by the Research Group in Architecture, Urbanism and Sustainability of the Superior Technical School of Architecture of Madrid, the result of this research will be, on one hand, the design and assessment model described, and secondly, but not least, the establishment of a network of agents dedicated to urban rehabilitation, renovation and renewal, based on an web platform RE-HAB (http://www2.aq.upm.es/Departamentos/Urbanismo/blogs/re-hab), where the research findings will be published during the implementation of the project in order to increase knowledge and share experiences.

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